



FIG 1
PRIOR
ART

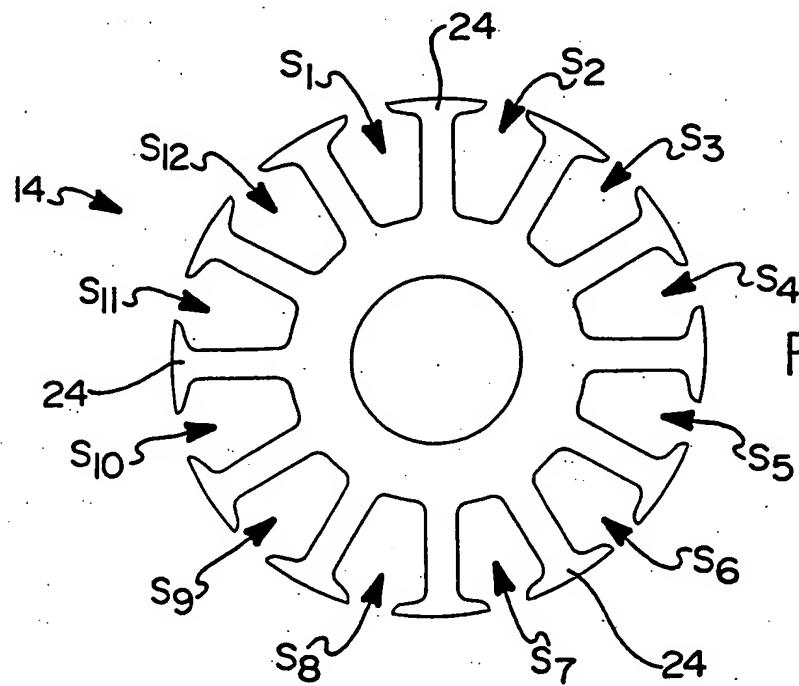
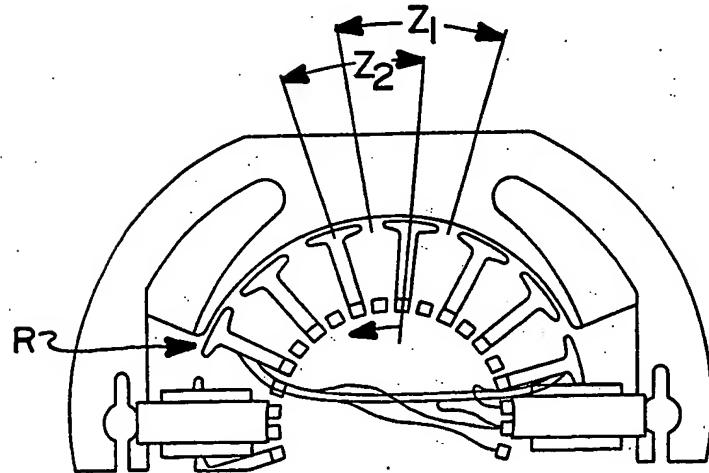


FIG 3

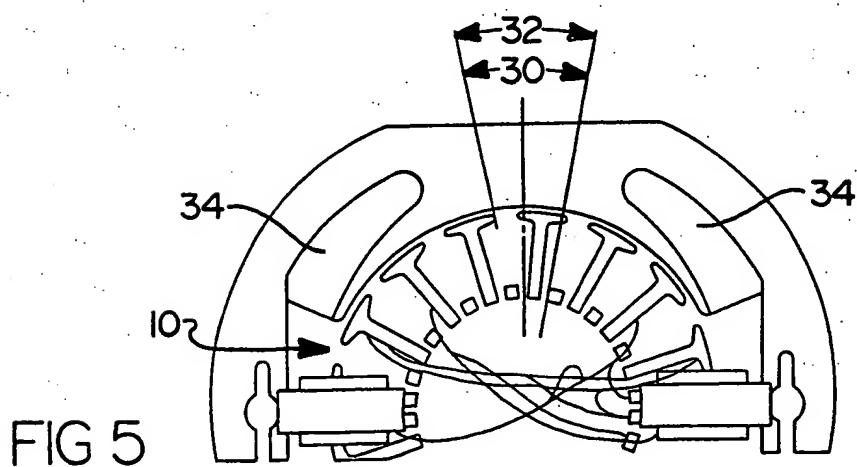


FIG 5

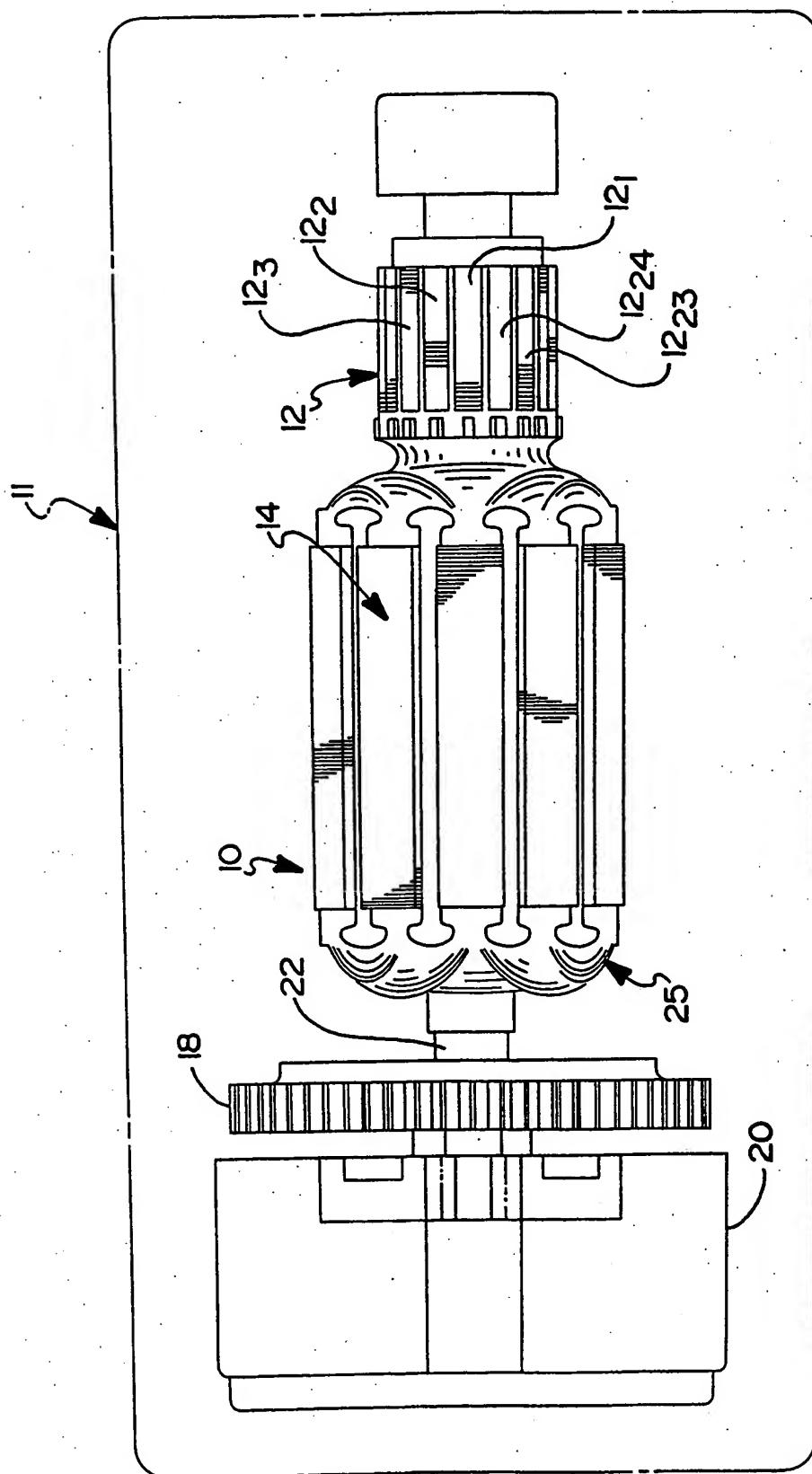


FIG 2

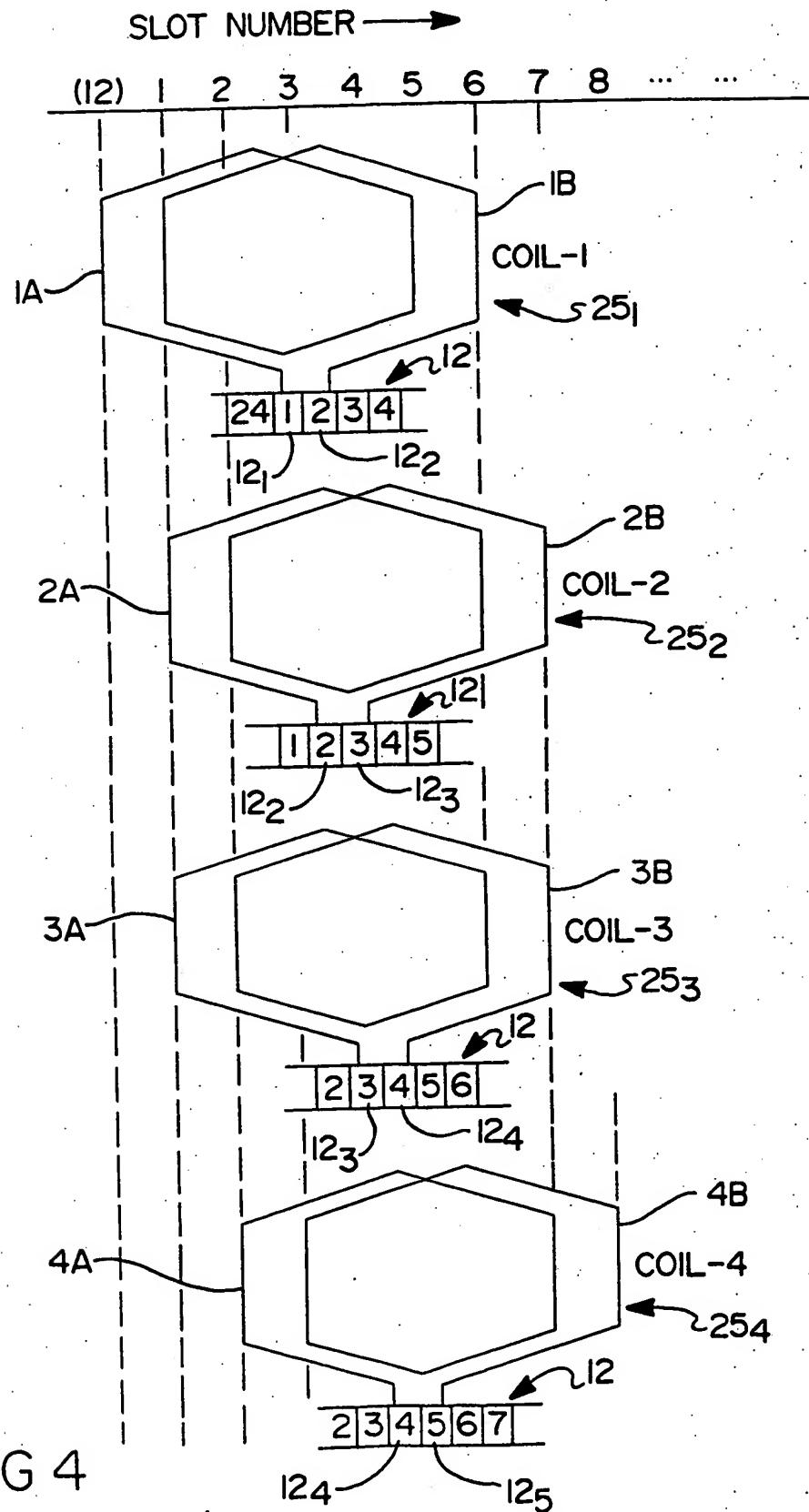
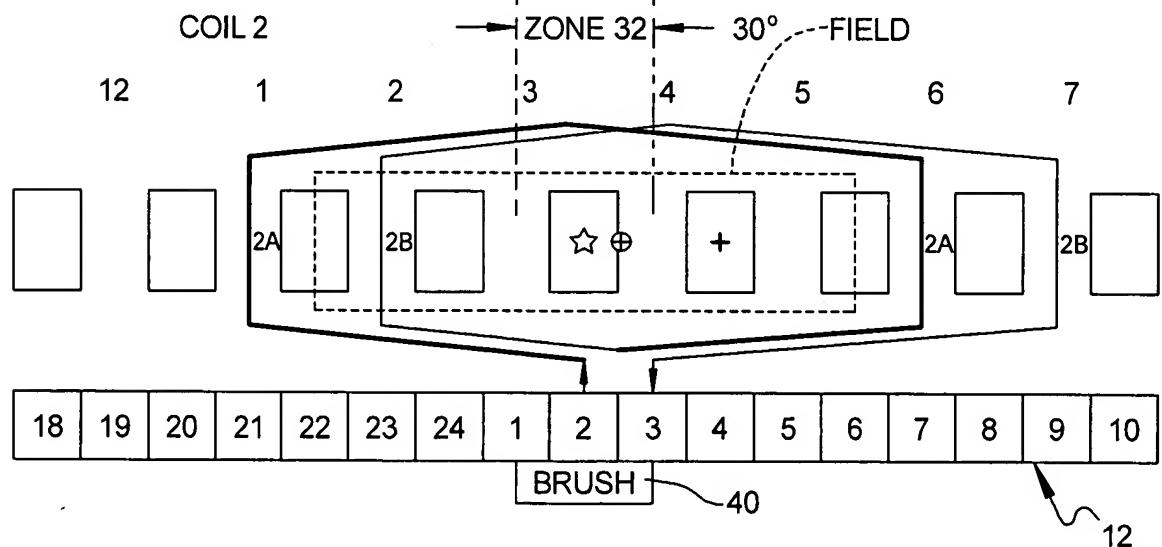
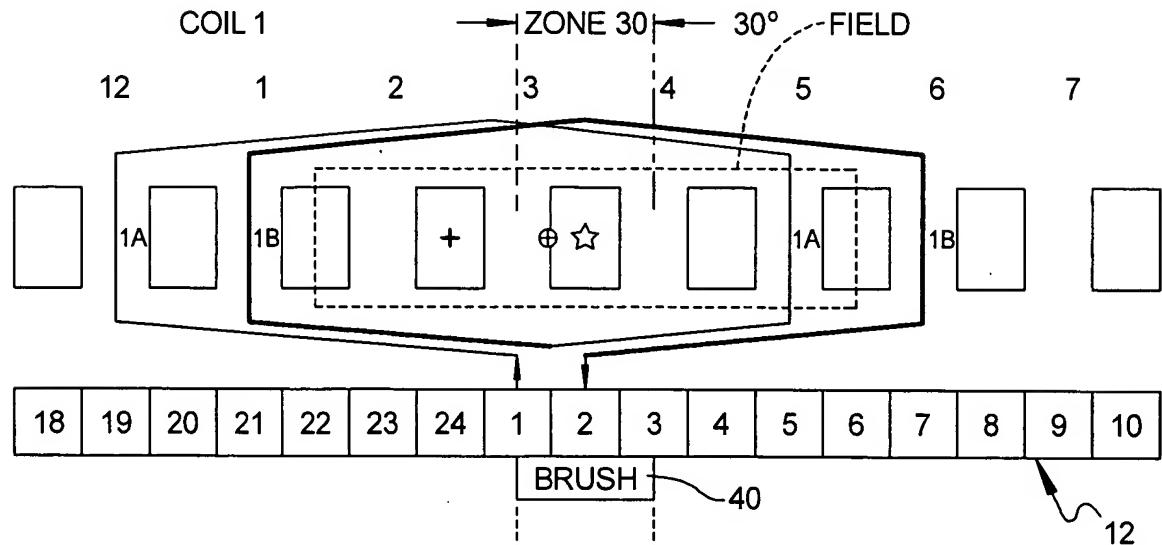


FIG 5A



- ★ MAGNETIC AXIS OF LARGER SUBCOIL
- ⊕ MAGNETIC AXIS OF SMALLER SUBCOIL
- ⊕ MAGNETIC AXIS OF TOTAL COIL (RESULTANT)

— - - - - AXIS OF FIELD POLE AND BRUSH

— - - - - POSITION OF MAGNETIC AXIS AT START OF COMMUTATION

— - - - - POSITION OF MAGNETIC AXIS AT END OF COMMUTATION

FIG 6A

FIG 5B

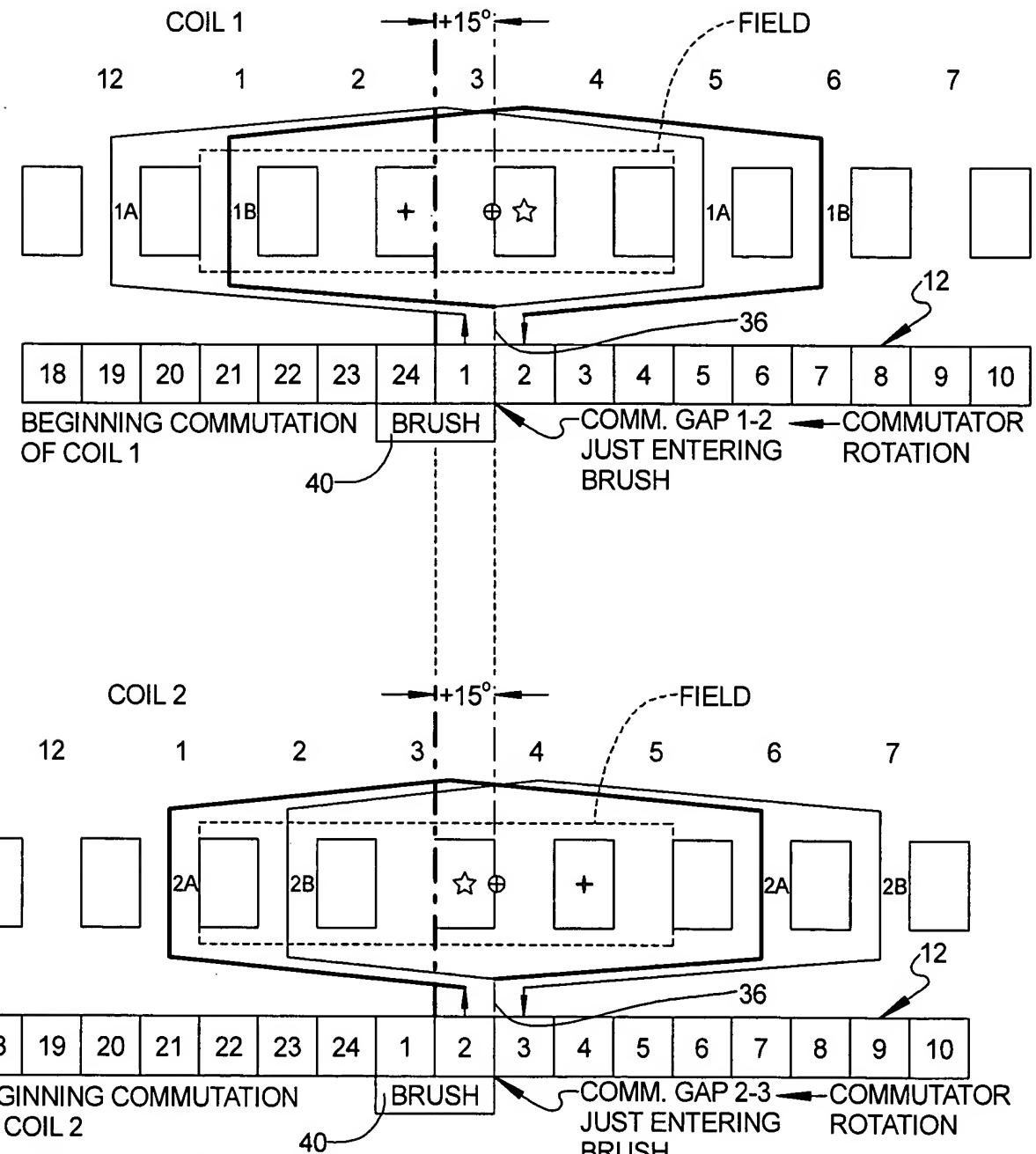


FIG 6B

FIG 5C

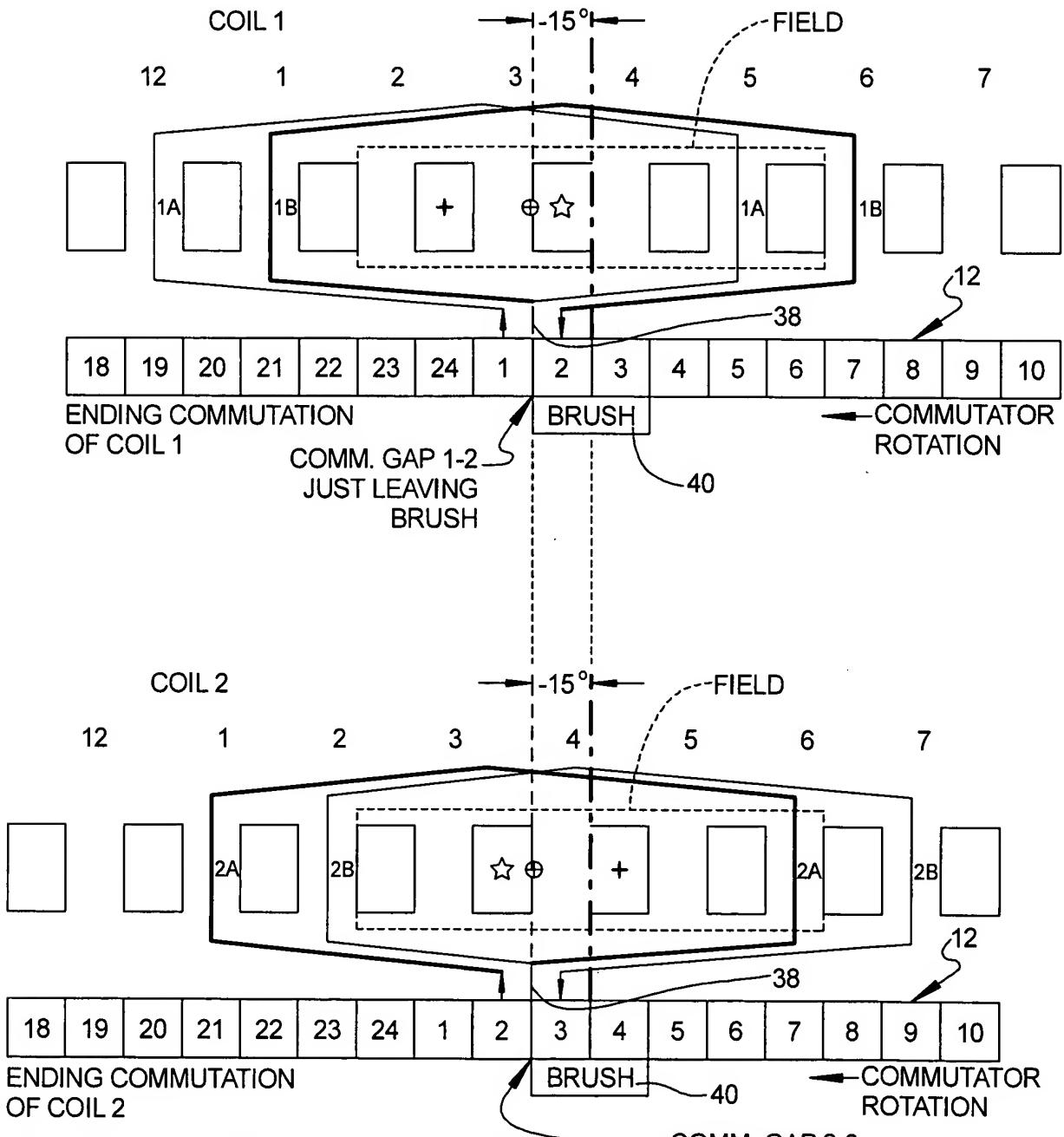


FIG 6C